IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

PATENT APPLICATION

Asif Dawoodi Gandhi
Frances Lin Jiang
Mathew Thomas
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CASE   10-16-15-24

Serial No.   10/632065   **Group Art Unit**   2617

Filed   July 31, 2003

Examiner   Holliday, Jamie Michele

Title   A Method Of Controlling Overload Over The Reverse Link

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

Enclosed is an appeal brief in triplicate for the above-identified application.

Please charge to **Deposit Account No. 12-2325** the fee of **$500.00** which is the fee set forth in 37 CFR 1.17c.

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Respectfully,

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908-582-7886.

Date: February 13, 2007

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

    Asif D. Gandhi

    Frances Jiang

    Matthew Thomas

    Stan Vitebsky

Serial No.: 10/632,065

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For: A Method of Controlling Overload Over the Reverse Link

Examiner: Holliday, Jamie Michele

Group Art Unit: 2617

Att'y Docket: 10-16-15-24

APPEAL BRIEF

Commissioner of Patents

Arlington, VA

Sir:

Applicants hereby submit an original and two copies of this Appeal Brief to the Board of Patent Appeals and Interferences in response to the office action dated May 16, 2006 and advisory action dated October 30, 2006. A Notice of Appeal was file on November 7, 2006 with the necessary extensions of time, so this Appeal Brief is believed to be timely filed.

The Assistant Commissioner is authorized to deduct the fee for filing this Appeal Brief ($500) from **Lucent Technologies Deposit Account No. 12-2325.**

BRIEF ON BEHALF OF APPELLANTS

In support of the Notice of Appeal filed on November 7, 2006, Appellants hereby provide the following remarks.

I. REAL PARTY IN INTEREST

The present application is owned by Lucent Technologies, Inc. The assignment of the present application to Lucent Technologies, Inc., is recorded at Reel 014356, Frame 0858.

II. RELATED APPEALS AND INTERFERENCES

Applicants are not aware of any related appeals and/or interferences that might affect the outcome of this proceeding.

III. STATUS OF THE CLAIMS

Claims 1-21 and 23-25 are pending in the application. The claims as currently pending are attached as Claim Appendix.

Claims 1-9, 11-17, 19-21 and 24-25 were rejected under 35 USC 102(e) as being anticipated by US Patent Application Publication No. 2004/0160914 to Sarkar.

Claims 10 and 18 appear to have been rejected, and claim 23 was rejected, under 35 USC 103(a) as being unpatentable over US Patent Application Publication No. 2004/0160914 to Sarkar in view of US Patent Application Publication No. 2002/0136192 to Holma et al.

IV. STATUS OF AMENDMENTS

There has been no amendment to the claims after final rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention provides a method that addresses the concerns surrounding overload and system performance degrading over the uplink. More particularly, the method provides increased user access to the network in an overload condition over the uplink. The method provides controls over the uplink of the data transmission rate afforded to each user over the uplink if the network is in an overload condition.

In one embodiment, a method of the present invention includes evaluating a reverse link loading. This evaluation step may involve examining two or more resources associated with reverse link loading within a first time period. Thereafter, a message may be broadcast containing information regarding the availability of resources. This message may be broadcast in response to the evaluated reverse link loading and might comprise a reverse activity bit. This availability of resources message may correspond with an overload condition, increasing the number of active connections, decreasing the number of active connections, increasing an available transmit rate, maintaining the available transmit rate and/or decreasing the available transmit rate.

In another embodiment, a wireless communication system of the present invention includes a detector for evaluating a reverse link loading. This detector may realize this evaluation by examining at least two resources associated with reverse link loading within a first time period. The wireless communication system also has a controller for controlling the reverse link loading by broadcasting an availability of resources message. This message may be broadcast in response to the evaluated reverse link loading and may comprise a reverse activity bit. This availability of resources message may correspond with an overload condition, increasing a number of active connections, decreasing the number of active connections, increasing an available transmit rate, maintaining the available transmit rate and/or decreasing the available transmit rate.

In another embodiment, a method of the present invention includes the step of determining a loading on the reverse link. Thereafter, the reverse link loading is managed in response to the determined loading. This step may be realized by controlling a reverse link traffic channel and/or controlling a number of active connections. Here, the step of controlling the reverse link traffic channel traffic channel may comprise a relatively faster control of the traffic channel, while the step of controlling a number of active connections may comprise a relatively slower control. The method may also include the step of broadcasting message corresponding with the availability of resources.

VI.   GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Appellants respectfully request that the Board review and overturn the two rejections present in this case. The following issues are presented on appeal in this case:

(A)   Whether claims 1-9, 11-17, 19-21 and 24-25 are patentable over US Patent Application Publication No. 2004/0160914 to Sarkar.

(B)   Whether claims 10, 18 and 23 are patentable over US Patent Application Publication No. 2004/0160914 to Sarkar in view of US Patent Application Publication No. 2002/0136192 to Holma et al.

VII.   ARGUMENT

A.   Legal Standards

As the Examiner well knows, an anticipating reference by definition must disclose every limitation of the rejected claim in the same relationship to one another as set forth in the claim. *In re Bond*, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990).

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). Second, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. That is, there must be something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561 (Fed. Cir. 1986). In fact, the absence of a suggestion to combine is dispositive in an obviousness determination. *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573 (Fed. Cir. 1997). The mere fact that the prior art can be combined or modified does not make the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990); M.P.E.P. § 2143.01. Third, there must be a reasonable expectation of success.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); M.P.E.P. § 2142. A recent Federal Circuit case emphasizes that, in an obviousness situation, the prior art must disclose each and every element of the claimed invention, and that any motivation to combine or modify the prior art must be based upon a suggestion in the prior art. *In re Lee*, 61 U.S.P.Q.2d 143 (Fed. Cir. 2002). Conclusory statements regarding common knowledge and common sense are insufficient to support a finding of obviousness. *Id*. at 1434-35. Moreover, it is the claimed invention, <u>as a whole</u>, that must be considered for purposes of determining obviousness. A mere selection of various bits and pieces of the claimed invention from various sources of prior art does not render a claimed invention obvious, unless there is a suggestion or motivation in the prior art for the claimed invention, <u>when considered as a whole</u>.

It is by now well established that teaching away by the prior art constitutes *prima facie* evidence that the claimed invention is not obvious. *See, inter alia, In re Fine*, 5 U.S.P.Q.2d (BNA) 1596, 1599 (Fed. Cir. 1988); *In re Nielson*, 2 U.S.P.Q.2d (BNA) 1525, 1528 (Fed. Cir. 1987); *In re Hedges*, 228 U.S.P.Q. (BNA) 685, 687 (Fed. Cir. 1986).

B. Claims 1-9, 11-17, 19-21 and 24-25 are patentable over Sarkar

<u>Claims 1-9, 11-17 and 19-20</u>

Claims 1-9, 11-17, and 19-20 were rejected under 35 USC 102(e) as being anticipated by US Patent Application Publication No. 2004/0160914 to Sarkar. Applicants respectfully disagree for the following reasons. First, claims 1 and 13 recite the limitation of "<u>evaluating</u> a reverse link loading <u>by examining</u> at least two resources within a first time period." (underlines added for emphasis) The office action alleges that Sarkar's "measuring the reverse link pilot quality" teaches applicants' "evaluating a reverse link loading," and Sarkar's "determination of whether resources are available to accommodate request" and "C/I measurements, power control messages, etc." teach applicants' "examining at least two resources within a first time period." Supposing these specific allegations are true, Sarkar nevertheless fails to teach or suggest that the reverse link pilot quality is measured (i.e., evaluating the reverse link loading) by examining

available resources and C/I measurements, power control messages, etc. (i.e., examining at least two resources) within a first time frame.

Second, claims 1 and 13 recite the limitation of "<u>broadcasting</u> an availability of resources message in response to the evaluated reverse link loading." (underline added for emphasis) The office action alleges Sarkar's "respond to request" and "maximum value allowed" teach applicants' "broadcasting an availability of resources message in response to the evaluated reverse link loading." Applicants respectfully disagree. Sarkar teaches responding to a request of a particular mobile station. The response can be <u>a grant to that particular mobile station</u> allowing it to transmit on the reverse link. A maximum power level is associated with the grant. See page 7, paragraphs [0071] and [0074]. By contrast, claims 1 and 13 involves broadcasting of an availability of resources message. Broadcasting is a <u>transmission intended for a group of mobile stations</u>, and is not a transmission intended for only a particular mobile station. The availability of resources message indicates to mobile stations the resources available, and is not a grant to allow a particular mobile to transmit over the reverse link.

Claims 2-9, 11-12, 14-17 and 19-20 depend on, and include all the limitations of, either claims 1 or 13. For the reasons discussed earlier with respect to claims 1 and 13, Sarkar does not teach or suggest "evaluating a reverse link loading by examining at least two resources within a first time period" or "broadcasting an availability of resources message in response to the evaluated reverse link loading."

Thus, Applicants respectfully submit that the prior art of record does not each all limitations of the invention set forth in claims 1-9, 11-17, and 19-20 and request that the Examiner's rejections of claims 1-9, 11-17, and 19-20 be <u>REVERSED</u>.

Claims 21 and 24-25

Claim 21 and 24-25 were rejected under 35 USC 102(e) as being anticipated by US Patent Application Publication No. 2004/0160914 to Sarkar. Applicants respectfully traverse. Claim 21 recite the limitation of "<u>broadcasting</u> an availability of resources message in response to the determined reverse link loading." (underline added for emphasis) For the reasons discussed earlier with respect to claims 1 and 13, Sarkar does not teach or suggest "broadcasting an availability of resources message in response to the determined reverse link loading."

Claims 24-25 depend upon, and include all the limitations of, claim 21. For the reason discussed earlier with respect to claim 21, Sarkar does not teach or suggest "broadcasting an availability of resources message in response to the determined reverse link loading."

Thus, Applicants respectfully submit that the prior art of record does not each all limitations of the invention set forth in claims 21 and 24-25 and request that the Examiner's rejections of claims 21 and 24-25 be REVERSED.

C. Claims 10, 18 and 23 are patentable over Sarkar in view of Holma

<u>Claims 10 and 18</u>

It appears that claims 10 and 18 were rejected under 35 USC 103(a) as being unpatentable over US Patent Application Publication No. 2004/0160914 to Sarkar in view of US Patent Application Publication No. 2002/0136192 to Holma et al. Claims 10 and 18 depend upon, and include all the limitations of, claim 1 and 13, respectively. For the reasons discussed earlier with respect to claims 1 and 13, Sarkar does not teach or suggest "evaluating a reverse link loading by examining at least two resources within a first time period" or "broadcasting an availability of resources message in response to the evaluated reverse link loading," It is also believed that Holma does not teach or suggest "evaluating a reverse link loading by examining at least two resources within a first time period" or "broadcasting an availability of resources message in response to the evaluated reverse link loading." Thus, Applicants respectfully submit that the prior art of record does not each all limitations of the invention set forth in claims 10 and 18 and request that the Examiner's rejections of claims 10 and 18 be REVERSED.
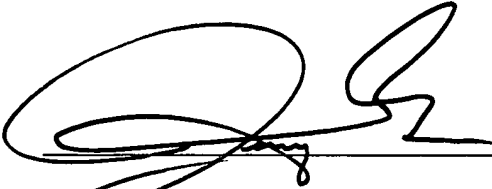
<u>Claim 23</u>

Claim 23 was rejected under 35 USC 103(a) as being unpatentable over US Patent Application Publication No. 2004/0160914 to Sarkar in view of US Patent Application Publication No. 2002/0136192 to Holma et al. Claim 23 depends upon, and includes all the limitations of, claim 21. For the reasons discussed earlier with respect to claim 21, Sarkar does not teach or suggest "broadcasting an availability of resources message in response to the evaluated reverse link loading." It is also believed that Holma does not teach or suggest "broadcasting an availability of resources message in response to the evaluated reverse link

loading." Thus, Applicants respectfully submit that the prior art of record does not each all limitations of the invention set forth in claim 23 and request that the Examiner's rejections of claim 23 be <u>REVERSED</u>.

Respectfully submitted,

Date: _02/13/07_

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ATTORNEY FOR APPELLANTS

VIII.   CLAIMS APPENDIX

Original

1.   A method of wireless communication comprising:

evaluating a reverse link loading by examining at least two resources within a first time period; and

broadcasting an availability of resources message in response to the evaluated reverse link loading.

Original

2.   The method of Claim 1, wherein the step of examining comprises at least one of:

examining the at least two resources in use; and

examining the at least two resources leftover.

Original

3.   The method of Claim 2, wherein the at least two resources examined comprise at least one a sector loading, total interference, received signal strength indication rise, per-leg and per-call frame error rate, physical channel erasure statistics and distributions, filtered loading estimate, transmit power and power control outer-loop set point compared to received Ecp/Nt.

Original

4.   The method of Claim 3, wherein

the step of evaluating a reverse link loading comprises computing the sector loading by measuring energy in a pilot signal over total noise, DRC values, channel gain and used Walsh code space; and

the received signal strength indication rise corresponds with a total received power at a sector, with a noise floor and with a threshold that varies to minimize adverse control reactions.

Original

5.   The method of Claim 4, comprising:

sampling a received signal strength indication; and

calculating a noise floor and the received signal strength indication rise in response to the sampling received signal strength indication.

Original

6.   The method of Claim 4, wherein changing a longest idle user to at least one of inactive status and dormant status if a sector state is above a slow control threshold.

Original

7.   The method of Claim 6, wherein at least one of:

inactivating a user with a maximum number of bytes transferred if all users are active; and

changing an access resistance timer if all users are not at least one of active idle and having a maximum number of bytes transferred.

Original

8.   The method of Claim 7, wherein the access resistance timer determines if subsequent access attempts by a user after a previous attempt failed.

Original

9.   The method of Claim 3, wherein the availability of resources message corresponds with at least one of an overload condition, increasing a number of active connections, maintaining the number of active connections, decreasing the number of active connections, increasing an available transmit rate, maintaining the available transmit rate and decreasing the available transmit rate.

Original

10.   The method of Claim 9, wherein the availability of resources message comprises a reverse activity bit.

Original

11.   The method of Claim 9, comprising controlling the reverse link by at least one of:

        managing a traffic channel in response to an average of the received signal strength indication rise and the filtered loading estimate; and

        managing the number of active connections in response to the average of the received signal strength indication rise and the filtered loading estimate.

Original

12.   The method of Claim 9, comprising:

determining an available transmit rate in response to examining the at least two resources associated with the reverse link within a second time period, the second time period being an order of magnitude greater than the first time period.

Original

13. A wireless communication system comprising:

a detector for evaluating a reverse link loading by examining at least two resources within a first time period; and

a controller for controlling the reverse link loading by broadcasting an availability of resources message in response to the evaluated reverse link loading.

Original

14. The wireless communication system of Claim 13, wherein

the detector performs at least one of examining the resources in use within the first time period and examining the resources leftover within the first time period, and

the at least two resources examined comprise at least one a sector loading, total interference, received signal strength indication rise, local and global frame error rate and distribution, filtered loading estimate, transmit power, received Ecp/Nt, received Eb/Nt, and power control outer-loop set point.

Original

15. The wireless communication system of Claim 14, wherein

the detector computes the sector loading by measuring energy in a pilot signal over total noise, DRC values, channel gain and used Walsh code space; and

the received signal strength indication rise corresponds with a total received power at a sector, with a noise floor and with a threshold that varies to minimize adverse control reactions.

Original

16.   The wireless communication system of Claim 15, comprising:

a sampler for sampling a received signal strength indication; and

a calculator for calculating a noise floor and the received signal strength indication rise in response to the sampling received signal strength indication.

Original

17.   The wireless communication system of Claim 14, the availability of resources message corresponds with at least one of an overload condition, increasing a number of active connections, decreasing the number of active connections, increasing an available transmit rate, maintaining the available transmit rate and decreasing the available transmit rate.

Original

18.   The wireless communication system of Claim 17, wherein the availability of resources message comprises a reverse activity bit.

Original

19.   The wireless communication system of Claim 17, comprising:

a controller for managing the reverse link by at least one of:

controlling a traffic channel transmission rate in response to a relatively short term average of the received signal strength indication rise and the filtered loading estimate; and

controlling the number of active connections in response to a relatively long term average of the received signal strength indication rise and the filtered loading estimate.

Original

20.   The wireless communication system of Claim 17, wherein the detector determines an available transmit rate in response to examining the at least two resources associated with the reverse link within a second time period, the second time period being an order of magnitude greater than the first time period.

Previously presented

21.   A method of wireless communication over a reverse link comprising:

determining a loading on the reverse link;

managing the reverse link loading in response to the determined reverse link loading by at least one of controlling a traffic channel data rate and controlling a number of active connections; and

broadcasting an availability of resources message in response to the determined reverse link loading.

Claim 22 canceled

Previously presented

23.   The method of Claim 21, wherein the step of controlling a traffic channel comprises a relatively faster control of the traffic channel and the step of controlling a number of active connections comprises a relatively slower control.

Original

24.   The method of Claim 23, wherein the managing the reverse link loading is performed in response to an average of a rise in a received signal strength indication and filtered loading estimation, the average comprising at least one of a relatively shorter term and a relatively longer term average.

Previously presented

25.   The method of Claim 21, wherein the step of determining a loading on the reverse link comprises:

sampling the received signal strength indication; and

calculating a noise floor and the rise in the signal strength indication in response to the sampling of the received signal strength indication.

IX. EVIDENCE APPENDIX

Applicant is not aware of any evidence submitted pursuant to §§ 1.130, 1.131 or 1.132, that might affect the outcome of this proceeding. Evidence entered by Examiner and relied upon by appellant in the appeal are as follows: US Patent Application Publication No. 2004/0160914 (Sarkar) and US Patent Application Publication No. 2002/0136192 (Holma et al.).

IX. RELATED PROCEEDINGS APPENDIX

Applicant is not aware of any related appeals and/or interferences that might affect the outcome of this proceeding.